



Regional Disparities in the Levels of Demographic Development in Haryana-2001

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Research Paper—Geography

Population in its various aspects, has two-fold relevance to development: on the one hand people are factor of production as workforce and effective market for goods and services. On the other, they are sole beneficiary of the entire process of development. Therefore, all development should address the people. Increase in welfare and improvement in quality of life of the people should be the main concern of the development. The present paper is an attempt in this direction & tries to analyse regional disparities in the levels of demographic development. The reviewed literature reveals that a majority of the studies used indicators on population dynamics, literacy, urbanization and occupational structure to represent the quality of people inhabiting an area. Accordingly demographic development of an area may be defined as the demographic performance of an area in terms of pattern of life, as reflected in rural-urban component, quality of life as manifested in its literacy rates, vital rates, sex ratio and level of economic dynamism as suggested by its occupational structure.

For the purpose of present study, the following indicators have been selected:

(A) Urbanization-1. Urban population as percent of total population 2. Population in 20000+ towns as percent of total population.

(B) Literacy - 3. Literates as percent of total population 4. Female literates as percent of total female population. 5. Rural literates as percent of total rural population.

(C) Diversification of Rural Economy- 6. Rural non-agricultural workers as percent of total workers 7. Rural male non-agricultural workers as percent of total male workers 8. Rural female non-agricultural workers as percent of total female workers

(D) Sex-Ratio- 9. Females per thousand males.

Note: For absolute figures see annexure 1

Data Source-Secondary data has been used in this study and has been collected from Census of India(2001),Primary Census Abstract, Series-7, Haryana.

Methodology-The levels of demographic development have been analysed with help of nine indicators. The focus of study is on the year 2001. The data has been examined for the state at the level of districts. It has been represented through tables & map. Principal Component Analysis Method has been used to assess the relative levels of development. The data regarding all the selected indicators is subjected to this method to derive 'composite scores' of individual districts in terms of the levels of development. The technique involves transformation of the original data set into a new set consisting of general components, the number of which equals to the number of variables in the original data set. The eigen values corresponding to each of the components indicates the explanatory power of the respective components. It is generally seen that the first few components explain a greater

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part of the total variance in the original data set. Further, the correlation coefficient of each of the component with the variables in the original data set – i.e., the component loadings can be meaningful interpreted only in the case of first few components. Generally, the components having eigen value less than 1 are usually skipped over in the analysis. The loadings of the selected components (correlation coefficient between the component and the original values and interpreted very much in a similar way) are used as weights of the standardized values of the given variables for working out component scores corresponding to each of the observation. It may be expressed in the following way (Johnston, 1978).

$$S_{ik} = \sum_{j=1}^n D_{ij} L_{jk}$$

Where, D_{ij} is the standardized values of observation 'i' on the variable 'j'; L_{jk} is the loading of variable 'j' on the component 'k'; S_{ik} is the score of observation 'i' on component k; and summation is overall 'n' variables. A high and positive score indicate that a particular district is more developed than others with lower scores.

Analysis-Regarding demographic development only 2 components have been extracted. In all, both of these components explain 84.14 percent of total variance collectively.

Table 1 Eigen Values and Variance Explained

Components	Eigen Values	Variance Explained	Cumulative %age
C1	5.49	61.08	61.08
C2	2.07	23.06	84.14

Source : compiled by the Author

Table 2 presents the loadings of each of the two components on the selected variables in the original data sets. It is observed that except variable 2, 5 and variable 9, the first component is highly positively correlated with all the selected indicators of development. On the whole, the first component represents that diversification of rural economy, urbanization and literacy are the leading factors affecting demographic development.

Variable 5 has a moderate correlation and variables 2 and 9 are negatively correlated with component 1. Component 2 reveals the importance of literacy, rural literacy in particular. It had a moderate correlation with C_1 also. It can be concluded that being affected by literacy and urbanisation the state's rural economy is diversified in developed areas.

Table 2. Components Loadings

Variables	C_1	C_2
1	0.87	-0.41
2	-0.82	-0.44
3	0.73	0.65
4	0.83	0.51
5	0.43	0.88
6	0.94	-0.16
7	0.93	-0.11
8	0.76	-6.231E-02
9	-0.59	0.46

Source : As given in Table 1

Table 3 reveals the scores of each component with overall scores for the 19 observations. The scores of individual components indicate the direction and extent to which an observation is associated with the respective components. The aggregate scores indicate the relative position of each of the observation. In some cases, the scores work out to be positive, while in the remaining others they are negative. A high and positive score indicate that a particular district is more developed than others with lower scores.

Table 3 Component Scores

Districts	C_1	C_2	Overall Score
Ambala	1.39	0.79	9.27
Panchkula	1.91	-0.41	9.63
Yamuna Nagar	1.08	0.11	6.16
Kurukshetra	0.35	0.39	2.73
Kaithal	-1.16	-1.06	-8.56
Karnal	-0.06	0.07	0.11
Panipat	0.96	-0.76	3.7
Sonipat	0.25	0.76	2.94
Rohtak	0.58	0.58	4.38
Jhajjar	-0.05	0.98	2.3
Faridabad	1.34	-1.74	3.76

Gurgaon	-0.37	-0.82	-3.72
Rewari	-0.28	2.09	2.79
Mahendragarh	-1.07	1.56	-2.64
Bhiwani	-0.85	0.58	-3.47
Jind	-1.08	-0.67	-7.32
Hisar	-0.51	-0.62	-4.07
Fatehabad	-1.51	-0.89	-10.13
Sirsa	-0.89	-0.94	-6.84

Source : As given in Table 1

To indicate the comparative levels of development, the overall scores have been categorized into following four categories as given in table 4

Table 4 Haryana: Levels of Demographic Development, 2001

Category (Overall Score)	No. of Districts	Names of Districts
High(Above 5)	3	Panchkula, Ambala, Yamuna Nagar, Rohtak,
Moderate(0-5)	8	Faridabad, Panipat, Kurukshetra, Jhajjar, Karnal, Sonapat, Rewari
Low(-5 to 0)	4	Mahendragarh, Gurgaon, Hisar, Bhiwani
Very Low(Below -5)	4	Jind, Sirsa, Kaithal, Fatehabad

Source: As given in Table 1

Accordingly the state has been regionalised into four regions:

- (1) Areas having high level of development. (Above 5)
- (2) Areas having moderate level of development. (0 to 5).
- (3) Areas having low level of development. (-5 to 0)
- (4) Areas having very low level of development.(Below -5)

1. Areas having high level of development (Above 5) -Demographically, the extreme north-east part of the state is highly developed. Three districts namely Ambala, Panchkula and Yamuna Nagar have been included in this region. The overall score value under this category is above 5. Almost all the indicators are favourable and responsible for high level of development in this region.

2. Areas having moderate level of development (0 to 5)- Moderately developed region of the state is comprised of eight districts i.e. Rewari, Faridabad, Jhajjar, Karnal, Panipat, Kurukshetra, Rohtak and Sonipat. All these

districts are situated in a long belt extending from Rewari in south to Kurukshetra covering all the above discussed eight districts. The overall score value under this region lies between 0 – 5.

3. Areas having low level of development (-5 to 0)-Mahendragarh, Gurgaon, Bhiwani and Hisar are the four districts having low level of development. In this regard, two broad belts are emerging out:

- (i) The western counterpart of the state.
- (ii) Nearby areas of region having moderate level of development. The overall score values under this region ranges between -5 to 0.

4. Areas having very low level of development (Below -5)-Middle-north and extreme north-west Haryana comprised of four districts namely Jind, Sirsa, Kaithal and Fatehabad is included in this category. The overall score value under this category is below 5. Regarding infrastructural development also, this region is the most deficient part of the state. Figure 1 represents the levels of demographic development in Haryana. It has been observed that the extreme north-east and the entire eastern Haryana except district Gurgaon Region are comparatively more developed. On the whole eastern Haryana is more advance in this regard than its western counterpart. Middle north-Haryana is the most deficient region in the state.

Conclusion-In this regard Panchkula is the most developed district followed by district Ambala and Yamuna Nagar. On the other hand, district Fatehabad is the least developed district. Four types of regions emerges out.

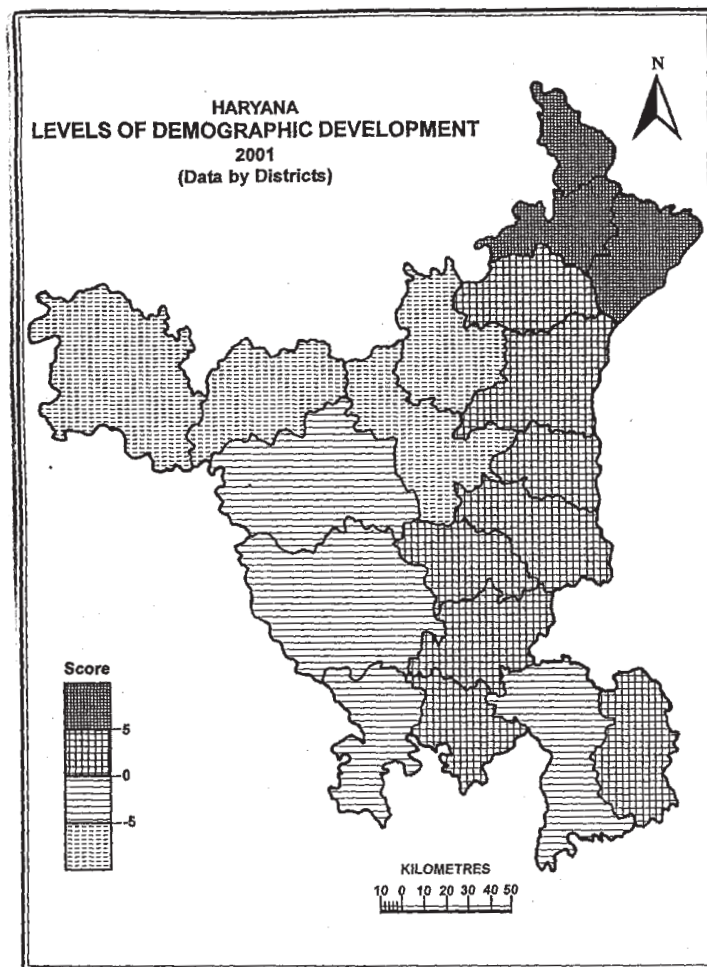
- (i) Highly developed region covering extreme north-eastern part of the state near state capital Chandigarh is comprised of four districts i.e. Panchkula, Ambala, Yamuna Nagar. The overall score value is above 5 in these districts. These are highly urbanised, literate and economically diversified districts.

- (ii) The moderately developed region covering almost the entire Eastern Haryana including district Panipat, Sonipat, Faridabad, Rohtak, Jhajjar, Karnal, Kurukshetra and Rewari

in south. The overall score value in these districts ranges between 0-5. Panipat, Sonipat and Faridabad are industrially advanced areas which affects literacy and diversification of economy. The position of Rohtak district in this category is due to literacy and urban population. District Rewari has recruitment centre for armed forces. A large male folk is employed in these services which ultimately increases awareness among people. District Jhajjar is situated in National Capital Region. District Panipat, Karnal and Kurukshetra are agriculturally developed and have vast potential for agro-based industries. All these things ultimately results in overall development of these districts. (iii) Region having low level of

development including four districts namely Mahendragarh, Gurgaon, Bhiwani and Hisar. In this regard, two broad belts are emerging out: (i) The western counterpart of the state and (ii) Nearby areas of region having moderate level of development. The overall score value in these districts lies between -5 to 0.

(iv) Very low level of development has been observed in the middle-north part of Haryana and extreme north-west covering districts Jind, Kaithal, Sirsa and Fatehabad has been observed for very low level of development. The overall score value in these districts is below -5. Overall western Haryana is comparatively less developed than its eastern, counterpart.



Raw Data with Absolute Values

Districts	Indicators								
	1	2	3	4	5	6	7	8	9
Ambala	35.2	32.44	75.31	67.4	69.63	70.7	69.8	75.8	868
Panchkula	44.49	42.98	74	65.7	66.62	77	80.2	65.5	823
Yamuna Nagar	37.73	29.61	71.63	63.4	65.35	66.4	63.2	81.9	862
Kurukshetra	26.11	26.06	69.88	60.6	65.88	53.6	51.5	69.5	866
Kaithal	19.39	15.79	59.02	47.3	55.78	37.1	41	28.3	853
Karnal	26.51	23.31	67.74	58	63.16	49.7	52.7	40.7	865
Panipat	40.53	37.74	69.17	58	64.23	62.2	67.5	49.7	829
Sonipat	25.12	23.67	72.79	60.7	70.09	47	54.4	32.6	839
Rohtak	35.06	31.33	73.72	62.6	69.53	49.1	57.7	31.1	847
Jhajjar	22.17	18.68	72.38	59.6	70.36	42.9	51.6	27.9	847
Faridabad	55.65	54.43	70.03	56.3	58.36	65.8	74.5	41.9	839
Gurgaon	22.23	13.83	62.91	47.8	57.09	59.7	66	47.5	873
Rewari	17.79	13.20	75.25	60.8	73.7	42.3	53	26.1	899
Mahendergarh	13.49	10.60	69.89	54.1	68.57	34.2	44.3	20.4	918
Bhiwani	18.97	15.04	67.45	53	65.25	36.1	42	26.8	879
Jind	20.3	18.01	62.12	48.5	58.55	33.6	40.6	21.4	852
Hisar	25.9	24.21	64.83	51.1	60.16	41.4	48.7	27.9	851
Fatehabad	17.63	16.77	57.98	46.5	54.56	32.6	38.1	23	884
Sirsa	26.28	26.36	60.55	49.9	55.82	38.8	40	36.2	882
Average	27.92	24.95	68.24	56.38	63.83	49.48	54.57	40.75	861.89
SD	10.84	11.27	5.52	6.54	5.85	13.80	12.59	19.24	23.90

Source: Statistical Abstract of Haryana, (2001) issued by Economic and Statistical Adviser, Planning Department, Government of Haryana.

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